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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	DATE RECEIVED
08/538,073	10/02/95	SUN	26860

21M1/0616

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EXAMINER
EVANS, G

ART UNIT	PAPER NUMBER
2106	

06/16/97

DATE MAILED:

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 1-22 is/are pending in the application.
- Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☒ Claim(s) 1-11 is/are allowed.
- ☒ Claim(s) 12-21 is/are rejected.
- ☒ Claim(s) 23 is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) _____
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of Reference Cited, PTO-892
- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 2,3,4,5,6,7
- ☐ Interview Summary, PTO-413
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

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DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 12-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lapham et al. in view of Dow et al. and Mueller. Lapham et al. in U.S. Patent No. 4,399,345 discloses laser trimming a resistor on a silicon substrate with a wavelength of 1.34 microns, which Applicant has disclosed as being within Applicant's third wavelength range. Lapham does not disclose the circuitry for measuring an operational parameter of the device, nor a beam positioner. Dow et al. in the article "Reducing Post-Trim Drift of Thin Film Resistors (sic) by Optimizing YAG laser Output Characteristics" teaches using an oscilloscope to measure resistance of a resistor during a functional laser trimming process. Mueller in the article "Functional laser trimming of thin film resistors on Silicon ICs" on the first paragraph of page 72 teaches an apparatus to scan the beam. It would have been obvious to adapt Lapham et al. in view of Dow et al., and Mueller to

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provide this to functionally laser trim a resistor on a silicon substrate. Regarding claim 13, using a computer to compare resistance readings and control a process is old and well known and official notice is taken of the same. It would have been obvious to adapt Lapham et al. in view of Dow et al. to provide this to computer control the process, permitting software adjustments to the process.

3. Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 1- 11 are allowed over the prior art of record .

5. The following is an examiner's statement of reasons for allowance: Leong et al. in U.S. Patent No. 5,611,946 uses various wavelengths from a laser to cut various materials at a probe station. Dow et al. in the article "Reducing Post-Trim Drift of Thin-Film Resistors by Optimizing YAG Laser Output Characteristics" discusses using a second harmonic generator generating 532nm from a 1064nm YAG laser to trim resistors to investigate its effect on post-trim depth. Regarding claims 1-11, none of the references of record teaches or suggests, alone or in combination, the method for modifying with laser output a measurable operational parameter of an activated electronic device while preventing a spurious optoelectronic response in the device, the device having a target material with sensitivity to laser output in a first wavelength range and nontarget material having optoelectronic sensitivity in a second wavelength range that forms a subset of the first wavelength range such that exposure to a wavelength within the second wavelength range causes spurious optoelectronic effects in the non-target material, determining a third wavelength range of laser output for which the non-target material has substantial optoelectronic insensitivity , the third wavelength range excluding the second wavelength range; activating the device; sending a laser pulse with a wavelength within both the first and third wavelength regions to ablate a portion of the target material; and measuring within the time interval a true value of the operational parameter of the device. In particular while Lapham et al.

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in U.S. Patent 4,399,345 uses a laser wavelength of 1.34 microns to laser trim resistors on a silicon substrate and in column 3, lines 4-7 teaches using wavelengths greater than 1.065 microns as the substrate becomes more "transparent" to prevent heat damage, Lapham does not disclose determining the second wavelength region.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. The status of Serial No. 08/343,779 on the first page of the specification should be updated.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoff Evans whose telephone number is (703) -308-1653.

GSE

June 9, 1997



GEOFFREY S. EVANS
PRIMARY EXAMINER
GROUP 210